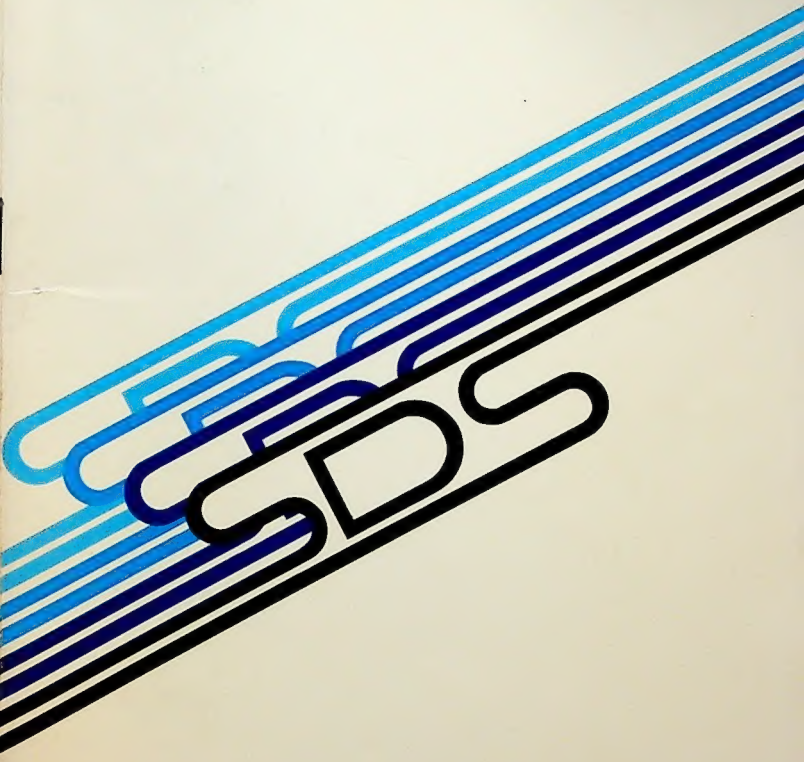

product guide

southwestern data systems™

Powerful & Efficient Apple Software

WE GUARANTEE IT!

Valued Customer:

Southwestern Data Systems has been a pioneer in innovative software for the Apple II since its inception in the late 1970's. From the start, we established a money back guarantee as evidence of our dedication to supplying only the finest products available. Software of such uncompromising quality became the cornerstone for our success and is the reason for our recognition as an industry leader today. Even our unique style of attractive, individually shrink-wrapped packages reflect this concern for overall product quality.

S.D.S. specializes in innovative support for the Apple II owner with trend setting ideas such as a "transparent" program protection scheme which allows back-up copies for the original buyer while effectively eliminating piracy; Executive Library Cases for convenient desk top diskette storage; highly sophisticated software, and much more.

In addition, S.D.S. offers a truly professional support staff capable of answering your questions and encouraging your suggestions. S.D.S. also keeps in touch with program revisions and updates. Ultimately, S.D.S. combines quality and reliability in both product and support.

Roger Wagner

President, S.D.S.

southwestern data systems

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BY RIP KEMP

Users Guide by Hilliard Jason

THE SOFTWARE MANAGEMENT SYSTEM

Take Charge...

...of your growing collection of disk-based software.

Disk Library is an elegant, user-oriented system for creating and maintaining a thorough, cross-referenced Index of all your disk-based programs and data files. It provides for Automatic entry into your Library file of the full catalog of any Apple* diskette. Disks formatted under other operating systems (such as Pascal and CP/M*) are easily entered from the keyboard. Written entirely in machine code, Disk Library's operation is both smooth and swift.

EASY TO OPERATE

- Menu-driven
- User-definable prompt defaults
- Single keystroke operation
- Full featured **Editing**
- Super fast **Sorts** by any field (1200 items sorted in 4 seconds)
- Works with all disks created under DOS 3.1, 3.2 and 3.3
- User definable **Program Types** (e.g., Business, Game, Utility) of up to 15 characters each can be assigned to each program entry with single keystrokes or via block actions
- On-screen and printed **Summaries**, by File Type (Integer, Applesoft, Binary, Text) and by Program Type (e.g., Accounting, Graphics, Music)
- **Block Actions** (global editing/deleting)
- Instant **Searches**...by full or partial string (find any item in 1/3 sec.!)
- New Files can be **Appended** to existing records, in memory or on disk
- **Unique Feature:** User can redefine the Disk Volume Number displayed by the DOS Catalog Command
- A Unique Volume Identifier and Disk Title can be Assigned to each disk entry in your library file.
- Printed **Reports** are attractively formatted for easy readability

EASY TO LEARN

A 75 PAGE, PROFESSIONALLY PREPARED USER'S GUIDE IS PROVIDED: INCLUDING:

- Introductory Tutorial, will have you using Disk Library in 10 minutes
- Advanced Tutorial, enables you to master **Disk Library's** many advanced features
- Reference Section, provides quick answers for experienced users
- Applications Section, gives you many ideas for maintaining your library
- Index, enables you to find whatever you need

Applesoft Command Editor

by Jeff Baron & Roger Clayton

A.C.E. combines a large number of the most useful programming utilities into one convenient package. You'll find that many things you wished you could do, or that were previously an involved operation, are now unbelievably easy.

This is a co-resident operating system that enhances the immediate mode capabilities of Applesoft.* Co-resident means that these routines effectively become part of your APPLE II*, and that the various commands and utilities are immediately available WHILE entering or modifying existing program lines. With A.C.E. installed your program development time will be greatly reduced and more fun!

FEATURES

A.C.E. provides the following enhancements:

- Line editor lets you easily edit program lines: insert or delete right in the line, jump to any point, change only what is needed, then "accept" the line without having to copy over the remainder!
- Instantly determines whether a variable is present in the program in memory and on which lines it occurs.
- Display values of all non-array variables at any time — excellent for debugging programs. Being able to see the order in which the variable were assigned also means you can speed up programs using large numbers of variables.
- Easily convert decimal and hex values back and forth right from the keyboard.
- Auto line numbering (as in Integer).
- User defined keyboard macros allow you to define keywords, variable or other strings as a single control character. Best of all, definitions can be entered at any time. This means you do not have to run a separate editor program, and that keys can be re-defined "on the fly" as is appropriate to what you're doing at that moment.
- Any Monitor command can be executed directly from Applesoft, so you'll never have to enter the Monitor again to look at bits of code, or alter specific locations. This feature alone will save you hours when linking machine code routines to Applesoft programs.
- 'B' command displays last BLOAD address and length.
- 'F' command gives free space on current diskette in drive.
- 'M' command gives current memory status: LOMEM:, HIMEM:, FRE(0).
- 'D' gives an ASCII and Hex dump of memory contents starting at a location allowing you to easily view memory for specific strings, values, etc.

SYSTEM REQUIREMENTS: 48K Apple II, disk w/FP ROM or Language Card.

*Apple II and Applesoft are both trademarks of Apple Computer, Inc.

APPLE-DOC™

by Roger Wagner

An aid to the development and documentation of Applesoft programs.

Apple-Doc is one of the most powerful programming utilities you can own. Whether you're a professional programmer, or just have an occasional listing to modify, you'll find Apple-Doc more than pays for itself in time savings.

Apple-Doc not only provides valuable information on each of your programs, but allows you to change any element throughout the listing almost as easily as you would change a single line!

Here are the basic utilities included in Apple-Doc:

XREF:

A cross-reference utility with three distinct operations.

The first is a Variable Cross-Referencer. This creates a table of every variable used in a program and a list of every line the variable is used on. The list can be done on all of the program or just a given line range. Once the list is created, your own descriptors of what each variable does can then be entered, and stored in a separate disk file. This means that working on the program after a long period of inactivity no longer has to be a frustrating and time consuming process. In addition, the need for internal REM Statements is eliminated by the ability to store the descriptors in a disk file.

Next, a Line Number Cross-Reference option creates a similar table of every line in the program called by a GOTO, GOSUB, etc., and all the lines each is called from. References to lines not present in the program are specially flagged to attract your attention.

The Constant Cross-Reference creates a table of all the numbers used in a program (not including those listed by the Line Number Cross-Reference function). This is very helpful in business, scientific, or statistical programs where a large number of constants are being used.

Printed output of the created tables can be automatically formatted to provide left, top and bottom margins, and perforation-skip, even if your printer does not normally support this!

All three programs can be used at any time without the need to turn your program into a textfile. It is assumed your program is already in memory, at which point you would type in: EXEC XREF. The program will do its job, and then return you to your original program as you left it. You can also put XREF on 'HOLD' to make the utilities co-resident if you wish. Routines can be run in as little as 2K remaining memory space, so no program will be too large to document.

For a typical program, it only takes 30 seconds to create the Cross-Reference table. This means that it's always simple to get the list for the program you're working on.

REPLACE

This is a powerful replacement editor which works in a manner similar to XREF. Your program is already in memory when REPLACE is EXECed to run it. You can easily rename any or all occurences of any variable in your programs. It will, in fact, replace any set of characters or BASIC statements with any other set, making it indispensible when customizing programs.

Before each replacement, the program line can be displayed with the item to be replaced shown in inverse. On all replacements you have the option of either a global or local search and replace, with or without prompting.

As with XREF, REPLACE can be made co-resident if doing a large amount of editing, or when working with a number of different programs.

LISTER

Creates the most professional listing of a program possible. Top, left and bottom margins can be defined, (again, even if your printer doesn't usually do this!) Puts the name of the program and date in an attractive banner. Lister can also be made co-resident if you intend to print listings on a number of programs.

APPLE-DOC's many uses include:

- Custom software consultants provide thorough and well documented listings using the entire Apple-Doc package.
- Neater listings and variable lists make program development a pleasure, rather than a memory test of the programmer.
- Businesses customizing software for their own use quickly find and edit variables and subroutines using REPLACE.
- Find typographical error caused "bugs" resulting from incorrect variables, constants, or line numbers not actually in the listing.
- Check for variable name compatibility/conflict problems when merging subroutines or checking programs.

SYSTEM REQUIREMENTS: 48K Apple with DOS 3.3, Applesoft in ROM or Language Card.

List Master™

by Ted Birckhead and Roger Wagner

An excellent companion to APPLE-DOC, LIST-MASTER* provides a number of utilities for performing large scale changes to your program listings in a high-speed and automatic way. This means a tremendous savings in program development time, and helps assure logical and usable listings at all stages of your program's development. It also means you can produce a final version which operates in the minimum of space and at an optimum speed.

APPLESPEED takes any Applesoft program and optionally removes REMarks, shortens variable names, combines lines, and renumbers by 1's. Each of these steps can considerably reduce the length of a program, and altogether the reduction can be as much as 25-50%. Speed of operation typically increases as well. Each option can be individually selected or combined to make just the alterations you desire.

The SMART RENUMBER program is the finest in renumber utilities. Not only does it do the usual job of renumbering, but also gives you options not found in any other package. SMART RENUMBER gives you the option of preserving the logical blocks of line numbers that you establish for the various routines in a program. This means that the renumbered version will still retain the logic and workability of the original. If you've ever tried to work on a program after you've blindly renumbered the entire thing by 10's, you'll appreciate this feature! Also included are merge routines that allow you to quote blocks of lines from one part of your program to another — with automatic renumbering of appropriate line references!

COMP-LIST will compare any two Applesoft or Integer programs and list out any lines added, deleted, or changed. This is often handy after you have renumbered or othewise changed a program and you wish to list out just the changes.

SYSTEM REQUIREMENTS: 48 K Apple with DOS 3.3, Applesoft in ROM or Language Card.

Merlin™

by Glen Bredon

What kind of assembler would you expect from a company that established itself with programming utilities? Simply the best, of course. MERLIN is more than just an assembler. It is an extremely powerful macro assembler, with a sophisticated editor, combined with numerous other files and programming utilities into a truly remarkable package.

The MERLIN assembler, besides having the common features you would expect, allows such enhancements as the optional writing of object files directly to disk, and linking files to assemble source listings otherwise too large to fit in memory at once. The source listing can also use macro routines, thus saving time and space. The macro feature of MERLIN allows you to give a simple name to often used routines in a listing, and then enter only the name of the macro when entering text.

MERLIN will read and write text files as well as binary source files, and is often capable of using files generated on other assemblers with little or no adjustments. The global search/replace function of the editor also makes it easy to change pseudo-ops that may have been peculiar to the other assembler.

Additionally, MERLIN supports SWEET16 opcodes as well, and the manual includes a short tutorial on this subject by Steve Wozniak, co-founder of Apple Computer, Inc.

In addition to the MERLIN assembler, the package also includes:

SOURCEROR:	This generates pseudo source code from raw binary data. Uses a pre-defined Applesoft Source label file to give the most detailed listings possible. The label file can also be edited to include your own labels as you desire.
MACRO LIBRARY:	A library of commonly used macro definitions and fundamental operations such as multiplication and divide routines is included on the diskette.
SWEET16 SOURCE:	A source code for a transportable SWEET16 interpreter, usable even without the Integer non-Auto Boot ROM.
APPLESOFT SOURCE:	If you have Applesoft in ROM or LANGUAGE CARD, you can use utilities included in the MERLIN package to create a fully labeled and commented listing of Applesoft BASIC. This is an invaluable aid to anyone attempting to gain a deeper understanding of the internal workings of Applesoft.

MERLIN requires a 48K Apple, with language or RAM card. MERLIN is compatible with most 80 column cards and supports upper/lower case entry, including the one-wire shift key mod and commercial lower case devices.

MERLIN is shipped on a double-sided DOS 3.3 diskette, with notebook-format user's manual.

To better illustrate the power of MERLIN, here is a partial listing of the various commands available while using the MERLIN assembler:

EXEC MODE

Command:	Description
C: CATALOG	Display catalog, allow DOS commands.
L: LOAD	Load a binary source file from disk
R: READ	Read a text file from disk.
S: SAVE	Save a binary source file to disk.
W: WRITE	Write a text file to disk.
A: APPEND	Append a source file to the one in memory.
D: DRIVE	Toggles from drive 1 to drive 2.
E: EDIT	Enter MERLIN assembler editor mode.
O: OBJ SAVE	Save object code in memory to disk.

EDITOR

(direct commands)

ASM	Assembles source file.
PR#	Same function as BASIC PR#
USER	Connect user routine at $3F5.
TABS	Set tab stops for editor listing.
LEN	Returns length of source file.
MON	Exits to monitor. Return with Control-Y
VID	Select an 80 Column display board.
PRTR	Turns on output paging routine for printer listings
VAL	Returns the result of any legal assembler arithmetic expression: +, —, *, /, AND, OR, base xyrt, etc.
$, N	MERLIN has a built-in HEX/DEC converter.

(text editing commands)

Add	Add lines to listing.
Insert	Insert lines above specified line. (auto renumber)
Ctrl-L	Case toggle: upper/lower case.
Ctrl-O	Enter non-keyboard character.
Delete	Delete a range of lines.
Replace	Like delete, but falls into Insert.
List	List source with line numbers.
	Repeat last range listed.
/	Continue list from last line number.
Print	List source without line numbers.
Ctrl-P	Prints 32 '*'s for comments, etc.
Ctrl-@	Prints '*', 30 spaces, '*' for creating banners.
Find	Find all occurrences of a string.
FW	Find all occurrences of a word.
Change	Search and replace all occurrences of a string.
CW	Search and replace all occurrences of a word.
Edit	Edit a line number or range specified.
EW	Edit all lines that a word appears in.
MOVE	Move a range of lines (auto renumber).
COPY	Copy a range of lines.

(line editing commands)

Ctrl-I	Insert text at cursor.
Ctrl-O	Insert a control character.
Ctrl-D	Delete a character.
Ctrl-F	Find next occurrence of a character (auto repeat).
Ctrl-B	Put cursor at beginning of line.
Ctrl-N	Put cursor at end of line.
Ctrl-R	Restore line to original form.
Ctrl-Q	Enter line up to cursor.
RETURN	Accept entire line regardless of cursor position.

ASSEMBLER EXPRESSIONS

Add Subtract Multiply Divide

Exclusive-OR OR AND

Decimal Hexidecimal Binary

Low Byte of Label/Expression High Byte of Label/Expression

ASSEMBLER PSEUDO-OPS

(Directives)

EQU	Equate label to address or data.
=	Alternate form of EQU.
VAR	Equate special variables.
ORG	Establish run address
OBJ	Establish alternate assembly address.
PUT	Get source file from disk during assembly
SAV	Save object code to disk after assembly.
DSK	Assemble code directly to disk, regardless of size.
USR	User definable opcode
LUP	Repeat the next opcode 'n' times. ("loop")

(formatting commands)

LST ON	Sends assembly to screen or other output
LST OFF	Turns off assembly listing output
EXP ON	Gives full expansion of assembled code.
EXP OFF	Suppresses full printing of macros during assembly.
TR ON	Truncates display of comments.
TR OFF	Restores original default to full display.
PAU	Pause during assembly for a keypress.
PAG	Output a form feed to printer.
AST	Out put n asterisks to assembly listing.
SKP	Output n carriage returns to assembly listing.

(string commands)

ASC	Enter an ASCII string, high bit on or off.
REV	Like ASC, but with characters reversed.
DCI	Like ASC, but with last char hi bit set opposite.
INV	Like ASC, but with string in INVERSE coding.
FLS	Like ASC, but with string in FLASHing coding.

(data commands)

DA	Enter a two byte word, low byte first.
DDB	Enter a two byte word, high byte first. (both DA and DDB accept multiple data bytes)
DFB	Enter multiple bytes, delimited by comma.
HEX	Enter multiple bytes, entered in hex format.
DS	Reserve n bytes of space (negative values allowed).

(conditionals)

DO	IF 'O', discontinue assembling code.
ELSE	Invert previous assembly condition set by 'DO'.
FIN	Cancel the last 'DO'.

(macros)

MAC	Start of a macro definition.
EOM	End of a macro definition.
PMC	Assemble macro at present address.

(note: macros are nestable, and can use variable inputs)

munch-a-bug™

Munch-A-Bug (MAB) is a 6502 program which assists the user in trouble-shooting 6502 assembly language programs by actually running them in a controlled manner. As the program is run, each program step is displayed, along with all 6502 registers, and optional memory points as defined by the user.

This allows you to easily see exactly what occurs at each stage during a program, and quickly find any errors in the code. **MAB** is a professional programming tool, published by Southwestern Data Systems, a software company specializing in utility programs for the Apple II.

MAB uses only four zero page locations, and these are definable by the user, so there is never any conflict with a user's program. In addition, **MAB** includes its own mini-assembler, so minor patches to code can be made, right at debugging time, without having to re-run your assembler. **MAB** even supports the use of labels and strings!

MAB also supports such unique features as its "pass pointers". These allow the user to define a point in memory which can be flagged with a set number of "passes". At each pass the 6502 registers will be displayed. On the nth pass, **MAB** stops in the trace mode to further examine the routine in detail. **MAB** also has a "functional pass pointer", wherein a machine language subroutine can be executed at each pass, without affecting the main program (memory or registers). This is useful for performing various tests as to the status of the main program. By setting a special return flag, **MAB** will "pop up" in the trace mode only under certain conditions. These features mean you can easily trace machine language routines linked to Applesoft programs.

Munch-A-Bug's commands include:

A) Assemble 6502 "source code".
C) Call a subroutine.
D) Dump memory in both hex and ASCII.
F) Fill memory with a value.
G) Call a subroutine with breakpoints ("Go").
K) Connect or delete symbol table.
L) Disassemble 6502 code ("List").
M) Move memory.
N) Trace next instruction, but don't display JSR's.
O) "Other" screen display: TEXT, GR or HGR.
P) Display, set, or delete pass pointers.
Q) Quit.
S) Substitute values into a memory range.
T) Trace a 6502 program.
U) "Untrace". Steps through with no display, but with option of keyboard start/stop/end.
V) Convert between Hex and Decimal numbers.
W) Freeze display window.
X) Examine and/or modify 6502 registers.
Y) Define, display, or modify symbols (labels).

MAB screen displays are formatted at user discretion to either 40 or 80 column modes. **MAB** can also relocate to any location, including a 16K RAM card, for maximum versatility.

assembly lines: the book™

Beginning with the first issues of Softalk Magazine, Roger Wagner presented a monthly column in which was explained the essentials of machine language programming in a direct and uncomplicated way. The series assumed that the reader was at most only generally familiar with Applesoft BASIC. The series was a tremendous success, and accounted for more back-issue sales than any other column offered in the magazine.

Now the first 18 months of this series has been condensed into one handy book, making it easy for anyone with even a minimal of programming experience to learn 6502 machine language programming.

More than just a reprint, the series has been re-edited and new material added to the original presentation. In addition, an extensive "encyclopedia" of 6502 commands has been created. Each command is fully described, complete with a sample listing of its most common applications.

This book is a perfect companion to the MERLIN and MUNCH-A-BUG software packages, also produced by Southwestern Data Systems.

Included in the text are many examples, showing how to create functioning programs with the added commands that are presented in each chapter. Upon completion of the book, the reader can expect to have created sound generation and disk access routines, along with having learned the fundamentals of assembly language programming.

Here's a brief summary of the book:

Chapter 1: Internal Structure of the Apple
Chapter 2: Assemblers
Chapter 3: Loops and Counters
Chapter 4: Screen Output, Reading Paddles
Chapter 5: Comparisons, Reading the Keyboard
Chapter 6: Addressing Modes
Chapter 7: Sound Generation Routines
Chapter 8: The Stack
Chapter 9: Math Operations, The Status Register
Chapter 10: Disk Access: RWTS
Chapter 11: Shift Operations, Logical Operators
Chapter 12: Input/Output Routines
Chapter 13: Reading/Writing Disk Files
Chapter 14: Special Programming Techniques

PRINTOGRAPHER™

by Stephen Billard

THE HI-RES GRAPHICS PRINTING UTILITY FOR THE APPLE II

If you have been looking for a quick and easy way to print out any Hi-Res graphics picture, look no further, The PRINTOGRAPHER is the answer! This versatile package will transform any Hi-Res screen into a permanent hardcopy in just a few simple keystrokes. Completely menu-driven, The PRINTOGRAPHER requires no special knowledge of either graphics or printer commands

The PRINTOGRAPHER offers many features that give you complete control over the appearance of the final printout. You can easily select to print out in NORMAL (black on white) or INVERSE (white on black) inking, and also whether to have your picture printed either HORIZONTALLY or VERTICALLY. Another unique option is PICTURE MAGNIFICATION up to 9 times the original size with The PRINTOGRAPHER. You can also MOVE your picture anywhere on the page to be printed. As if that weren't enough versatility, The PRINTOGRAPHER lets you print either the entire Hi Res screen or any portion of it with its SPECIAL CROPPING feature. By combining this powerful feature with the magnification option, you can quickly magnify and print just the portion of the Hi-Res screen you desire.

And there's more! The PRINTOGRAPHER allow syou to print out pictures which are in memory or it will load them from disk for you. When disk loading is selected, only the pictures files are displayed in the menu for your convenience. Also included is a handy subroutine you can insert into any of your Applesoft programs that will print out any Hi-Res screen in seconds!

OK, but will it work with my printer? YES! The PRINTOGRAPHER is designed to support just about ANY PRINTER OR PRINTER INTERFACE with graphics capability. If your hardware is not listed below, you can easily configure The PRINTOGRAPHER by just responding to the questions in the configure program. The PRINTOGRAPHER comes with an easy to use MENU-DRIVEN configuration table for all of the following printers and printer interfaces and takes only seconds to complete

- Anadex DP-9500
- Anadex DP-9501
- Centronics 739
- C. Itoh Starwriter
- Diablo 1640
- Diablo 1650
- Epson MX-70
- Epson MX-80, Graftrax
- Epson MX-100, Graftrax
- MPI 88-G
- NEC PC 8023A-C
- NEC Spinwriter 5510
- NEC Spinwriter 5515
- NEC Spinwriter 5520
- NEC Spinwriter 5525
- Paper Tiger 440
- Paper Tiger 445
- Paper Tiger 460
- Paper Tiger 560
- Qume Sprint 5
- Apple Parallel Interface
- Apple Serial Interface
- CCS Asynchronous Serial Interface
- Epson Parallel Interface
- Mountain Computer CPS Multifunction Card
- Orange Micro Grappler Interface
- SSM AIO Interface

WITH THE PRINTOGRAPHER, YOU'LL BE PICTURE PERFECT!!!

The Applesoft* Compiler from the Apple II* Utility Specialists

Speed Star* is a full-function Applesoft compiler designed to quickly and easily convert your programs to fast and efficient 6502 machine language. This means a dramatic increase in the operating speed of your programs. And here's the best part — with Speed Star, it's all done automatically — no knowledge of assembly or machine language is necessary. Speed Star offers full support for DOS commands, Error Messages, Hi-Res and Lo-Res Graphics and much more, and its easy to use manual makes compiling a breeze.

Speed Star is extremely fast. Because it does not normally access the disk during compilation, it will compile approximately 1200 lines per minute! This is many times faster than most other Apple compilers. But pure speed is not the only significant advantage of Speed Star. Use it to protect your algorithms from theft or unauthorized modification.

Because Speed Star converts Applesoft programs to binary files, you can have any number of programs in memory at once, and the special "Compile to Disk" mode allows compilation of programs normally too large to be done in memory. Also contained in this truly dynamic package is a unique selective chaining option which allows you to pass just the variables you want to any or all subsequent programs. Speed Star is also the **ONLY** compiler that allows you to pass variables directly from an Applesoft program to a compiled program. This means you can use the compiled modules as subroutines from standard Applesoft programs.

Speed Star uses the following single Keystroke commands:

A)ddress	Begins compilation and operation at decimal
C)trl-C	Activates control-C stop
D)isk	Compiles to disk for greater memory
I)ndices	Initiates subscript check
L)ist	Lists program as it compiles
N)umber	References line numbers in BASIC program
O)rigin loc	Compiles in one location to be run in another
S)ubroutine	Insures correct set-up during compilation for machine language subroutines.
T)race	Activates TRACE - NOTRACE function

Another important feature of Speed Star is Southwestern Data Systems' latest innovation — the SDS DataKey*, a hardware key that plugs into your game paddle port in seconds without effecting normal paddle operation. The SDS DataKey allows the original Speed Star owner an unlimited number of backup copies while eliminating unauthorized software proliferation. With the SDS DataKey, the Speed Star diskette may be copied simply by using any standard copy program. The SDS DataKey is not required to run compiled programs.

SYSTEM REQUIREMENTS: 48K Apple II with Applesoft in ROM or equivalent.

*Apple II and Applesoft BASIC are trademarks of Apple Computer Inc.
*Speed Star and DataKey are trademarks of Southwestern Data Systems

By Peter Meyer

Now, from the programming experts at S.D.S., an easy-to-use way of putting the POWER and SPEED of machine language routines in YOUR OWN APPLESOFT PROGRAMS!

ROUTINE MACHINE does all the work for you — no knowledge of machine language programming, whatsoever, is required. Simply choose the routine you need from an ever-growing library, and Routine Machine will effortlessly put them in your program, and all done transparently! No need to be aware of or bother with BLOAD's, HIMEM:, etc.

Best of all, with just this starter package, you'll have the routines to put High Resolution **graphics** and **sound** in your programs immediately! Also included is a versatile **"Print Using"** module to banish the "decimal point demons" forever! To round out the package, we've also included powerful **search** and **sort** routines (for single dimension arrays; Search: 1000 elements in 1 second, Sort: 1000 elements in 90 seconds), and a number of other often-needed routines as well.

OUR GUARANTEE

IF YOU DON'T SAVE MORE THAN THE PURCHASE PRICE OF 'ROUTINE MACHINE' IN YOUR OWN PROGRAMMING TIME IN THE FIRST 30 DAYS YOU OWN IT, SIMPLY RETURN IT FOR A COMPLETE REFUND, NO QUESTIONS ASKED!

Additional library disks are already available. Some of the routines included in this package (plus others not listed) are:

SWAP	Swaps two string or numeric values
TEXT OUTPUT	Prints with no "word break" on screen
STRING INPUT	Input any string, regardless of commas, etc.
ERR	Stack fix for Applesoft ONERR handling.
GOTO	Allows computed GOTO's. Example: GOTO 5*X
GOSUB	Allows computed GOSUBs.
MOVE	Block memory move routine.
RESET HANDLER	Treats RESET with ONERR; or will RUN or reboot disk.
HIRES ASCII	Character set for mixing text with Hires graphics
TURTLE GRAPHICS	Versatile Hires graphics routines for easy drawing of Hires figures.

AMPERSOFT PROGRAM™ LIBRARY VOLUME #1

by Steve Cochard

The Ampersoft Program Library is the first in a series of supplementary routine libraries, designed to be used with the main S.D.S. software package, The Routine Machine

These routines are primarily array centered and are of invaluable use when writing any Applesoft program using numeric or string arrays. Routines work with both 1 and 2 dimensional arrays. Routines included in this package are:

CLEAR: Clears an array to 0's (or nulls).
DELETE: Deletes any array from memory
RENAME: Renames any array
RE-DIM: Redimensions any array without loss of data.
SEARCH: Finds any string within a 2 dimensional array.
KILL: Deletes any element/row/column from an array.
ADD: Adds an element/row/column to an array
FN1: +, -, *,/ any number to all elements of an array.
FN2: SIN, COS, TAN, ATN, SGN, INT, ABS, SQR, EXP, LOG.
RND: Fills array with random values.
READ+: High speed text file read (4 times faster than normal)
WRITE+: High speed text file write
SORT: High speed array sort
TIMED IMPUT: Waits for fixed time, then proceeds if no INPUT.
FORMATTED INPUT: Input statement with format prompt.
WAIT: Waits for definable time period, then proceeds.
KBYD: Gets character by direct keyboard scan (no pause)
HEX POKER: Puts Hex data directly into memory.
ARCSIN: Inverse Sine of all elements in an array.
ARCCOS: Inverse Cosine of all elements in an array.
DEG- RAD: Convert values in degrees to radians.
RAD- DEG: Convert values in radians to degrees.
ROUNDING: Round all elements to a given decimal place.
RESTORE+: Restores DATA painter to any element in the standard Applesoft DATA block.
DELIMITED STR$: Sort, Search or Display sub-fields within a delimited string.

This is an extremely versatile program. It is designed primarily for writing letters and other documents, but with so many supporting utilities and possible uses, it will be one of your most used diskettes.

The editor is written to function in a very visual way. The Apple screen acts like a "window" onto a 40-80 column page. Four-way scrolling lets you see any part of the page just as it will be printed. In addition, a special 'reading' mode compresses text into a 40-column format for proof-reading of your copy. This gives the best of both worlds — easy reading for editing, yet few, if any, "test printings" to get the appearance right.

Program supports full upper/lower case, including characters not normally available on the Apple keyboard. Any ASCII characters can be put right in the text, so using it with your printer is easy.

Expected conveniences include character insert/delete, line insert/delete, paragraph move/copy/delete, and forward & reverse tabbing. Text can be centered with a single keystroke, there are even math functions! Files can be linked to print out several files in the same run — useful for when documents are larger than that which can be directly held in memory.

Split screen capabilities allow you to view one part of the text while editing another. You can also save your own note pages of needed references, all accessible while entering text.

A global find routine can even search one or more entire diskettes making it useful as a free form database for fast access to phone lists, magazine titles, etc. At S.D.S. we use it to replace all the scraps of paper that accumulate as "important notes". With all the information in a single file, it's easy to recall even the slightest bit of information in just moments.

An especially powerful use of The Correspondent is for filling out forms that must be done often. Using this program you jump directly from entry to entry, with no manual adjustments in between needed. When the form is completed, print out as many copies as you like.

An additional program included is the LETTER CARRIER which allows you to send files using The Correspondent's two-way scrolling in letters to other Apple owners using the diskette itself as the media. In fact you can put the two-way scrolling in any of your own programs with only a minimum of additional programming.

As a programming utility The Correspondent is useful for accessing text files. You can easily see the data in a text file, and use the editing features to make small changes. It will even view VISICALC* files, so you can check not only data, but the original formulas that make up the model.

Reviewed in PEELINGS MAGAZINE, Vol. 1, No. 4, The Correspondent was rated the best program value, in terms of performance vs. price of ANY similar program.*

SYSTEM REQUIREMENTS: 48K Apple with DOS 3.3, with Applesoft in ROM or Language Card. Lower case display board recommended, but not required.

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*VISICALC is a trademark of Personal Software, Inc.
*Programs reviewed were Correspondent, Scribe, Magic Window, Apple Writer, PIE, Easy Writer, and Super-Text.

Communications from "A" to "Z"

With the original release of Ascii Express II, S.D.S. software was quickly established as the finest communications software available.

In an effort to maintain the highest product quality possible, we have continued to develop new and more advanced techniques to give you the greatest flexibility possible in selecting the communications software that's right for you.

For many uses, ASCII EXPRESS II and Z-TERM offer effective and economical solutions to the computer communications problem. Each has a proven track record of excellent performance.

For the business and professional environments where time and data accurracy are of economic importance and necessity, S.D.S. offers it's "Professional Series". This unusually advanced software series allows you to use features hardly approached by competitive packages and take advantage of state of the art communication techniques, regardless of the operating system. Standard Apple DOS, PASCAL, and CP/M are all fully supported by the respective packages, and all systems are totally conversant with each other.

The following entries provide specific information on each package. You may also wish to additionally request the S.D.S. Software Comparison Chart, which lists over 50 features of currently available communications software. This chart compares each S.D.S. product against its companions, as well as other competitive products.

ASCII EXPRESS II™

by Bill Blue

The ASCII EXPRESS is a very complete, **intelligent** terminal package for the Apple II.* It is fully compatible with the Hayes Micromodem II* and the Apple Communications Card. It fully supports upper/lower case text both from the Apple II keyboard as well as its display.

With this package your Apple can talk to just about anything that has dial up access, from another **Apple II** to mainframe systems! It features file oriented upload/download facilities, a built in line editor with full editing functions as well as support for your printer and keyboard **macros** in the terminal routine.

Also included are support programs to help you convert Apple II programs, (Applesoft, Integer and binary) to their file form. Fast machine language "crunching" is used to compress program files to their minimum size to save online time.

FEATURES

- Auto dial and answer capabilities when used with the Hayes Micromodem II
- Full upper/lower case text, keyboard and display!
- Programmable keyboard **macros** reduce complicated log-in procedures to a few simple keystrokes. A must for optimal use of online time
- Files can be transferred to or from **any** type of system, personal or mainframe
- Special Copy Mode records anything displayed on the screen into your user file
- Can accommodate approximately 20K of data in memory. Stores and retrieves files from disk.

LINE EDITOR

- Full upper/ lower case, 10 to 250 columns, visible control characters
- Insert and Delete functions for blocks of data within file.
- Individual line editing: replace, insert, delete, append to beginning or end of lines, auto centering.
- Disk file handling allows load/save of new file or appending data onto existing files either in memory or on disk.

Here is a brief description of some of its powerful features:

Receive anything that appears on your screen and store it in the system buffer. Once in the buffer, you can save it, print it, just look at it, modify it with the versatile line editor or call another computer and send it, or any of the above combinations. Two modes of receive: formal and conversive. The formal mode allows you to download previously prepared data with no extra "garbage" at the beginning or end of the file to edit out because you couldn't turn the copy buffer off in time. The conversive mode allows you to copy all correspondence between your keyboard and the host computer and save it in your local buffer.

Send data in three formats to accommodate any kind of host system. 1) Block dump, where the entire buffer is output as a block. 2) Block dump with handshaking. Sends a line at a time and waits for acknowledgement from host. 3) Character at a time for hosts with very slow input routines, one character is sent, wait for its echo and send another, etc.

300/110 baud, and **all** word length/parity/stop bits combinations are fully supported

Full or half duplex operation supported

Fully compatible with either the D.C. Hayes Micromodem (tm), the Apple (tm) communications card or similarly structured I/O devices, with the understanding of course, that dialing and auto-answer routines provided in the program are supported only with the Micromodem

Full **printer** support either in **terminal** mode, display buffer mode, or from within the editor

Software is fully upper/lower case compatible.

Keyboard **macros** allow you to easily define (and change) up to 12 strings of data, which can be output to the host computer with dual keystrokes. Log-in sequences can be predefined and kept on file, and sent with very few keystrokes. No need to remember complex log-in sequences or codes. Type them in once and forget about them! Also includes cross-reference table of **macros** to numbers on file

Terminal mode produces 126 ASCII characters — upper/lower case and others normally not available on the Apple keyboard.

Numbers file section Lets you keep 18 of your most often called systems, their phone numbers for auto-dialing and a **macro** file cross-reference table for semi-automatic log-ins! Now all you have to do is tell your computer which file to dial, and not only will the system represented in that file be called, but the appropriate **macro** file will be loaded as well. The result? **Fast, efficient** calls and log-ins!

Versatile line-oriented text editor, allows you full control over data you have just received or are about to send Or use as a text editor for other projects! Fully compatible with Apple DOS sequential text files, can read, write, append to file, append to buffer, add lines, delete lines, insert lines, retype lines and edit!

Also included in the package are support programs to allow you to create text files from Applesoft or Integer programs A **fast** machine language file-compress program that squeezes program files to their minimum form for both saving disk space and reducing transfer time. Typically a 25% savings in both! Also included is a program to convert a block of **binary** data to text file for merging with program files, or sending by themselves.

SYSTEM REQUIREMENTS: 48K Apple II, disk w/FP ROM or Language Card. Lower case display board recommended.

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*Apple II is a registered trademark of Apple Computer Co
*Micromodem II is a registered trademark of Hayes Microcomputer Products, Inc

Z-TERM™

by Bill Blue

Z-TERM, a sophisticated full-feature terminal package for the CP/M Apple, for use with the Microsoft Z-80 Softcard. The 16K RAM cards or Apple Language card are not required, but are very useful to increase the internal buffer size.

It fully supports the Hayes Micromodem, Apple Communications card, SSM-AIO board, CCS Asynchronous Serial card and others! Also supports the Local Apple 40 column screen, M&R Superterm, Videx and Apple Smartterm 80 column boards or external terminal, all interchangeably and with NO reconfiguration necessary!

FEATURES

- Fully compatible with standard CP/M sequential text files, can send files from disk of ANY size, and can receive up to 42K of data at a time!
- Accomodates four modes of transmission, including variable speed data flow, variable delay after c/r, and adjustable handshake and character flow modes.
- Fully supports lower case in all modes (with or without 80 column board provided a lower case display board is installed for the 40 column mode) with the local Apple keyboard (shift-key wiring ready)
- Completely table driven prefix keys allow you to produce any character not already on the Apple keyboard without losing any other keys! You can customize it to suit your specific requirements. Even the keyboard itself is table driven. You can even reassign actual key positions!
- Allows you to display normally invisible characters (i.e. control) for host output analysis while in terminal mode, or while reading from disk file!
- Full file-driven keyboard MACROS allow you to define strings for output with simple keystrokes for fast log-ins to host systems, or to issue various commands from within the system. The MACRO file also contains cross-reference to host phone numbers for auto-dialing with the Hayes Micromodem.
- Auto-disk-relogging takes care of unnecessary BDOS SELECT errors. You can read files or disk directories from within the program, or even exit, ERAse or REName files to suit, and reenter the program with all data intact!

- Fully supports COPY to buffer, printer (with or without COPY on), keep track of free buffer space and if the AUTO-SAVE mode is selected will send XOFF character to host, save file (with operator prompting) and then continue the COPY

- COPY, MACRO select, PRINTER and all other menu commands can be quickly accessed while in terminal mode. No need to ever lose data because you couldn't change program status quickly enough. STATUS report mode too, so you can examine the current program setup

- TERMINAL EMULATION allows your 80 column system to emulate the terminal of your choice or if you are already using a terminal, allows it to emulate that of a different type!

Z-TERM COMMAND SUMMARY

(available at main menu or from within terminal mode)

' Display program status
A Show control chars
B Baud rate select
C Clear current buffer
D Dial or connect (MM)
E Echo (duplex full/half)
F Free buffer space
H Hang up (MM)
I Disk directory
J REad disk file to screen
L Log new disk
M Macro group select
N Set delay after c/r
O Auto-save on/off
P Printer on/off
R Copy buffer on/off
S Send file to host
T Transpose Backspace/Rubout
V View current buffer
W Write buffer to disk
X Exit to CP/M
Z 80 column screen wrap

by Bill Blue

A very new concept in dial-up software for the Apple II* computer.

Have you ever wanted to be able to call your computer while you're away from home? Or, let your computer take messages for you or your friends in the form of a completely private message system? And all of this with complete security against unauthorized access by users you don't know, or don't want using your equipment!

ONLINE, an extraordinary software package from Southwestern Data Systems can do all that plus much, much more!

ONLINE requires a 48K Apple II plus computer equipped with the Hayes Micromodem* and at least one disk drive. The Mountain Hardware or California Computer Systems clock card may also be supported for automatic time and date posting of calls and messages.

Up to 100 user accounts which require an account number and password for log-in may be set up by the system operator. A guest account may also be set up if desired whose purpose would be to allow new or first time users a way to log-in to the system before a standard account has been assigned. Each account can be assigned different priority levels which ultimately determine which features or areas of the system may be accessed by that account. A complete caller logfile is maintained so you can quickly see who has called and when. This makes it ideal for club and multi-user use.

ONLINE supports very efficient mail handling between user accounts. Mail can be read only by the account holder to which it is sent and also supports auto-reply, read again, and delete modes. The messages can be up to 60 lines of 78 characters per line in the standard mail mode, or up to 800 lines in any form if composed via the versatile system editor.

The system editor supports extended mail facilities in addition to a universal text buffer which is utilized during text uploading, downloading and many extended editing functions for both mail and general text.

You can also keep the system entirely private and to yourself for your own personal access. As the system owner you are free to exit from the program itself while on-line, and access the computer directly or run other programs, all while under direct supervision, of a very special supervisory input/output, also protects the system against loss of carrier. If loss of carrier occurs, the system will completely re-boot and return to an on-line state waiting for the next caller.

ONLINE's many uses include:

- User groups can post announcements and news for members, have programs available for download, or receive program or data files from other members

- Your business can have an Apple II computer answering sales personnel's inquiries from the field at any hour of the day or night

- Field representatives may leave important ordering information to be acted upon immediately the next morning.

- Use as an advertiser for your company's products or services, take orders, handle requests for further information of products

- Call your computer at home from work or while on vacation, to dispatch messages to friends, or just see what's happening "at home" while you're away

Customizing the system for your own particular use, for your club or business is a very straightforward and relatively easy task. Elaborate help files are included for every step of the way during normal system operation, and helpfiles can easily be changed or added to suit your particular requirements. If using ONLINE for a club or business function, you can easily add "news" or "announcements" to suit a particular occasion. Each new file you add may be individually assigned to different priority levels.

SYSTEM REQUIREMENTS: 48K Apple II Plus equipped with DOS 3.3, Hayes Micromodem, one Apple II disk drive, Lazer Systems or Dan Paymar (or equivalent) lower case display board. Optional: Mountain Hardware or California Computer Systems clock cards, printer, additional drives.

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*Apple II is a registered trademark of Apple Computer Co.
*Hayes Micromodem is a registered trademark of Hayes Microcomputer Products, Inc.

the professional series™

S.D.S. now offers the complete "The Professional" series line of software to meet your most demanding communications needs. The series consists of ASCII EXPRESS "The Professional" for standard Apple DOS, P-TERM "The Professional" for the PASCAL Apple, and Z-TERM "The Professional" for Apple CP/M. All three programs operate nearly identically and are fully conversant with each other.

The Professional series provides sophisticated software for whichever operating system you prefer.

Unlike many other packages which can only make vague claims, The Professional Series software line delivers virtually every feature you could ever use in smart terminal software.

Some Features of "The Professional" Series

- Supports ALL current modem devices!
- Supports ALL 80 column boards!
- Easily configured to full compatibility with ANY asynchronous dial up host!
- Sends ANY TYPE of file to another Apple, regardless of size (see individual descriptions for more details)!
- ALL packages are 1200 baud compatible, when interfaced with a 1200 baud interface card and Bell 212 or Vadic standard modem.

IT COULDN'T BE SIMPLER!

In addition, The Professional series supports external terminals with standard interface cards. When used with an external terminal or 80 column card, they support full terminal emulation modes. Ideal for hosts utilizing screen oriented display with text editors or databases.

All professional series packages can be interrupt driven and have type-ahead keyboard and printer "ring buffers" This means that incoming data is never lost — even if your 80 column display board or printer is unable to keep up with the data flow. With interrupts, you can even execute most menu commands and never lose incoming data.

One of the more powerful features of The Professional series is the extensive macro capability of each system. Macros traditionally are a time-saving, and error reducing way of outputting entire strings with simple keystrokes. In The Professional series, this has been carried a few steps further. Each macro string in this series can be an actual "mini-program" which contains not only simple strings, but numbers for auto-dialing, and internal system commands with interactive options.

This means you can dial, log-on to the host computer, and execute commands to either the host or the program. On many hosts you could even receive files, log off and hang up, ALL AUTOMATICALLY!

DATA TRANSFER MODES

The most important aspect of any communications package is the flexibility given the user in terms of data transfer modes. There is a great diversity in the variety of host computers currently in use throughout the world. One must consider such factors as whether the host is line oriented in nature or not, and if so, does it accept a prompt? Also can the host accept full 300 or 1200 baud throughput, and does it echo incoming data?

The "Professional Series" software line provides the most flexibility available in any software. By simply selecting the appropriate modes, you can send data to ANY host with ease!

- BLOCK mode sends a disk file in one continuous stream of data.

- LINE mode sends a disk text file one line at a time. After each line is sent, it will wait for a "prompt" from the host to indicate the host's readiness for more data. The prompt is user definable and allows our software to "pace" its output to the capabilities of the host. An arbitrary delay (user settable) can also be used instead of the prompt. Overall, the RATE of data flow can be varied while the transfer is actually in progress. These options combined assure accurate transmission even under adverse conditions.

- CHARACTER mode sends a disk text file one character at a time, and waits for the echo of that character before sending the next. It is a "slow but sure" way of sending data to problem systems.

- PROTOCOL mode sends ANY TYPE DISK FILE to another Apple running one of the "Professional Series" packages, with complete error checking and correction. This is the CHRISTENSEN protocol wherein 128 byte blocks are sent with information about each block included. When the software detects an error, the block is retransmitted until it is received correctly.

Full TouchTone™ dial support is offered with the Novation Apple CAT™ modem. Also, with this device, automatic dialtone detect is standard and will allow multi-stage dialing such as with common carrier services that require an access number, wait for tone, dial another series of numbers, etc. Conventional pulse (rotary-type) dialing can be combined with TouchTone for use in situations where all TouchTone dialing is not possible.

The Apple CAT voice mode allows The Professional series and the Apple CAT to act like a telephone, place TouchTone calls, converse with a standard telephone receiver plugged into the modem. Incoming calls can also be answered with this mode. Switching from voice to modem is easily accomplished for the transfer of programs or files.

A conversive CHAT mode allows two operators to "talk" with each other in real time on the screen, greatly simplifying transfer of files and programs in the attended mode.

When the modem hardware supports it (which includes external modems), The Professional series offers full auto-answer and unattended operation modes supporting sending or receiving of files, disk directories and other functions. They are access code protected so unauthorized callers cannot access important files.

It is occasionally useful to know EXACTLY what a particular host is sending, especially in regards to control characters, which are normally invisible to a receiving system. In this series, the Show-Control-Character Diagnostic mode includes display of control characters, parity, framing and overrun errors.

CP/M is a registered trademark of Digital Research
Apple CAT is a registered trademark of Novation
TouchTone is a registered trademark of Bell Telephone, Inc.

PACKAGES IN "THE PROFESSIONAL" SERIES

All programs in The Professional Series are operationally similar, and include all the features described in the preceding pages. Different operating systems, however, do create minor differences. These, along with general system requirements, are listed below.

"THE PROFESSIONAL"

By Mark Robbins and Bill Blue

Requires a 48K Apple, with DOS 3.3. Written entirely in machine language, it is language independent, and will function equally well in an Apple II or Apple II+.

Ascii Express "The Professional" offers macros that may also contain system parameters. In addition to loading in the number to be dialed, command sequences, etc., the entire system can also be instantly reconfigured in terms of duplex, baud rate, parity, terminal emulation, etc.

Since the standard Apple DOS lacks the more sophisticated editors which are incuded in the PASCAL environment and C/PM operating systems, Ascii Express "The Professional" offers a versatile built-in line editor which allows you to create and edit files before or after transfer.

Sends Binary, Integer, Applesoft and Text files (including random text files) Apple-to-Apple, ERROR FREE!

BY JOEL KUNIN & BILL BLUE

Requires the Apple UCSD PASCAL operating system, in a 48K Apple with language card.

Sends and receives all file types including .CODE and DATA files Apple-to-Apple, with error checking and correction.

BY BILL BLUE

Requires a Z-80 microprocessor card and a 48K Apple II/II+.

Has all features of the standard Z-TERM package in addition to the "Professional Series" features described above

Sends and receives all C/PM file types including .COM files; also offers the PAN mail transfer mode. Fully compatible with any other programs utilizing the CHRISTENSEN protocol: MODEM, XMODEM, LMODEM, CMODEM, etc.

Compatible Z-80 cards:

Advanced Logic Systems Z-Card or Synergizer System
or
Microsoft Softcard

IF YOU STILL HAVE ANY DOUBTS THAT OUR SOFTWARE IS THE FINEST ANYWEHRE AND THE BEST CHOICE FOR YOUR PARTICULAR NEED, PLEASE SEND FOR OUR SOFTWARE COMPARISON CHART, OR GIVE US A CALL AND WE'LL BE HAPPY TO ANSWER ANY OTHER QUESTIONS YOU MIGHT HAVE.

DOUBLETIME PRINTER™

by
Morgan P. Caffrey & Dan Fischer

DOUBLETIME PRINTER is an extremely thorough and extensive package, which can easily pay for itself in a matter of weeks in computer time savings

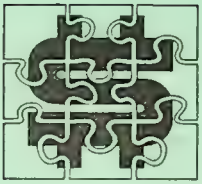
Until now, whenever the Apple was outputting information to a printer, it was "out of commission" until the printing was done. Because most printers are rather slow, this could mean a loss of use of the computer ranging from 5 - 10 minutes to an hour or more

DOUBLETIME PRINTER now liberates your Apple from being "printer-bound", by allowing the computer to essentially do two things at once With DOUBLETIME PRINTER installed, you'll be able to continue using many programs in the "foreground" while the printer faithfully prints out the desired files in the "background" Best of all, this happens with no perceptable slowing of either the printer or the foreground program!

DOUBLETIME PRINTER is more than just a simple interrupt driven utility though Over a year of development has gone into producing a complete and integrated package with a wide variety of functions and features. A few of these are:

- Prints BINARY, TEXT or APPLESOFT files, with no conversions necessary. All files are printed directly from the diskette so very little internal computer memory is used.
- Files can be FORMATTED when desired to include margins, paging, and even variable number of copies.
- Files can be prioritized so that other users can add their files to a diskette while printing is in progress. Urgent files can supercede earlier files placed on the disk.
- DOUBLETIME PRINTER has been extensively tested to assure its compatibility with a wide variety of printers and interface cards.
- DOUBLETIME PRINTER is already compatible with many software packages including a number of word processors such as The Correspondent, PIE Writer, and Applewriter. Many software products can be used with DOUBLETIME with little or no modification. A standard format is provided so that future software products can use the print spooling capacity of DOUBLETIME.
- DOUBLETIME PRINTER is supplied with a special F8 ROM (under special license from Apple Computer, Inc.) and an interrupt driver interface card. Both are simple to install by either end-user or dealer.

SYSTEM REQUIREMENTS: 48K Apple II/II+ with DOS 3.3.



FINANCIAL MANAGEMENT SYSTEM II™

A FAST, EASY-TO-USE ACCOUNTING SYSTEM DESIGNED FOR HOME AND SMALL BUSINESS ACCOUNTING

"CHECK WRITER II" included in this package!

OBJECTIVE: Enter an entire month's checking, charge card, and cash accounts in just a few minutes using your own personalized macro lists. Instant error correction on all entries. Audit all files by Code and month.

Powerful new **BUDGET MANAGER** for planning and comparing budget with audits. Printer routines for listing disk files, balance, reconcile, search, macro lists, audit and budget reports.

ALL THE ORIGINAL FEATURES NEW BUDGET MANAGER
1 - 3 KEYSTROKE ENTRIES
AUTOMATIC TAX CODING
SINGLE OR DUAL DISK DRIVE

ACCOUNT MANAGER: A self-prompting, error avoiding entry system which includes disk files, balance, reconcile, edit, and sort.

BUDGET MANAGER: Plan, review and balance your budget. Then generate complete reports with summation for any 1 - 12 month period.

SYSTEM UTILITY: Enter your own Item and tax Code Macros, up to 100 each. Configure program to match almost any printer/disk system.

SEARCH RECORDS: Search for any given data. Make specific and expanded searches using the Macro lists.

ACCOUNT AUDITOR: Totals all files by tax Code and any 1 - 12 month period with year-to-date totals. Perfect for your Tax Accountant.

CHECK WRITER II: Select and automatically print checks from your files. Use standard or personalized format.

SYSTEM REQUIREMENTS: 48K Apple with ROM Applesoft and disk required (Printer optional)

A HIGH SPEED STRATEGY GAME

WRITTEN BY RON SMAILES

alert!

Enemy missiles bearing nuclear warheads are hurtling towards the United States!

alert!

Your Apple computer has determined the I C B M targets to be the ten most populated cities in America!

alert!

AUTOMATIC A B M GUIDANCE SYSTEMS HAVE FAILED! Due to the disruption in the automated A B M delivery system, YOU have been designated as the "FAIL-SAFE" system and must manually target, maneuver and detonate the secretly-built A B M interceptors. THIS TASK IS YOUR ALONE! THE DEFENSE AND FATE OF THE CONTINENTAL UNITED STATES AND THE DEMOCRATIC FREE WORLD RESTS IN YOUR HANDS! DON'T BLOW IT! Strategic planning as well as quick reflexes are needed to survive! If you hold out long enough, even Congress helps by approving mobile MX missile and submarine-based reinforcements.

NORAD is a real-time, high resolution color graphics action game written for use on the APPLE II microcomputer with a minimum of 48K of memory and at least one disk drive.

"NORAD is licensed by Western MicroData Ent., Ltd."

NOT "JUST ANOTHER" ABM-LIKE GAME
NORAD'S WORLD MAP SHOWS ALL THE ACTION
"IN A TOTALLY FRESH, NEW WAY"
(According to THE SOFTALK REVIEW, December 1981)

Hi-Res

MasterType™

Whether you use your personal computer primarily for business or pleasure, you know that improving your KEYBOARD SKILLS will help you use your machine more efficiently.

You also know that, in your heart, you really want to play GAMES. Colorful, fast-moving computer games —games with powerful laser blasts and satisfying explosions.

With **Hi-Res Master Type**, you can have both. **Master Type** combines the dramatic action of Space Invaders with a carefully conceived series of 17 keyboard drills.

As a businessperson, professional, programmer or simply as an Apple II enthusiast, you should buy it to improve your typing skills. If you are parent, you will want it for your kids. But no matter why you buy it, we bet that you'll sit down and blast some words from time to time, just for fun.

It's this unique combination of serious purpose and pleasure that makes **Hi-Res Master Type** so powerful. It makes you want to learn. Education should always be like this.

Hundreds of Apple II owners have already discovered **Hi-Res Master Type**. It has already been listed among Softalk's ten best-selling home-user oriented software products.

products
products
products
products
products
products
products

other products & services

services
services
services
services

outstanding innovations™

EXECUTIVE LIBRARY CASES

These high quality diskette cases are a must for the serious diskette user. They combine the utility of the best of all the common methods for diskette storage with an unparalleled look of distinctive beauty. A superior grade vinyl covering with brass plate clasp provides maximum protection and assures diskettes can't fall out, making it ideal for situations where they're transported from place to place. And even if you don't move your diskettes about, you'll find the compact size of the case when stored, and its smart shelf appearance make it a valuable accessory to your computer.

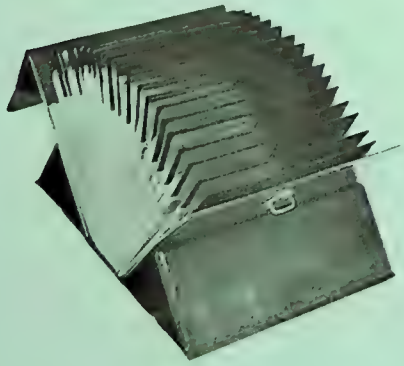
When in use, special Velcro sealed flaps open out for stand-up use on desk or table top. Every diskette can be easily seen, thus making each one instantly accessible without having to thumb through the usual box or notebook. Diskettes go in and out effortlessly — no more diskettes scattered about the work area to be damaged or misplaced.

We think you'll find these unique cases to be the finest storage method available, and definitely the easiest to use. Each carries the unconditional S.D.S. guarantee of satisfaction, and is available from computer stores throughout the world that carry the S.D.S. product line.

Available in sizes to fit both 5¼" and 8" diskettes. Each case holds 20 diskettes.

VINYL DISKETTE PAGES

We also carry vinyl diskette holders for use in 3-ring notebooks. These are packages with 10 pages per set, with labels included. Each page holds to 5¼" diskettes.



books

S.D.S. often gets calls or letters from people requesting various kinds of technical or programming information on the Apple II. As a service to our customers, S.D.S. is happy to offer the following books relating to the Apple II. All provide important information on the Apple computer not found elsewhere.

- Apple Monitor Peeled
- Applesoft in Depth
- Assembly Lines: The Book by Roger Wagner
- Beneath Apple Dos
- Best of Cider Press '78/'79
- Best of Cider Press '80
- Micro on the Apple Vol. 1
- Micro on the Apple Vol. 2
- Peeking at Call Apple Vol. 1, 1978
- Peeking at Call Apple Vol. 2, 1979
- Peeking at Call Apple Vol. 3, 1980
- What's Where in the Apple

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Southwestern Data Systems, an industry pioneer in innovative software for the Apple II, is always looking for authors. There are no limitations on the size or type of software you can submit — utilities, communication, business, education, or games — the only requirement is that it must meet the quality standards which typify all SDS products. When you join the SDS team, you get the benefits of a professional support staff experienced in providing all you need to get your program to market. Here are some of the ways we help you:

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The procedure for submitting software for our consideration is as follows:

A) Send a copy of your program via registered mail marked "Attention Software Evaluation". We will acknowledge receipt within 48 hours.

B) The program should be submitted on diskette and all necessary documentation must be included in the package.

C) For your protection and ours, your program should be copyrighted near the beginning. For example, "Copyright by (your name and address). Do not copy under penalty of law." Your program will be treated with strict confidence and no copies of your work will be made.

D) Our Evaluation Team will thoroughly review your program and documentation within six weeks.

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Products listed in this catalog are available from Apple Dealers and other computer stores throughout the world. To locate the SDS dealer nearest you, simply call or write Southwestern Data Systems at our main office in Santee, CA.

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